

WHAT IS CLAIMED IS:

1. A thermoplastic resin composition comprising:  
a fluoro-resin in an amount ranging from 5 to 40 parts by weight,  
the fluoro-resin including crosslink formed between at least a part of  
5 carbon atoms forming part of a molecule chain of the fluoro-resin and at  
least a part of carbon atoms forming part another molecular chain of the  
fluoro-resin, and active end group formed at least a part of the molecule  
chain of the fluoro-resin; and  
a thermoplastic resin other than the fluoro-resin, in an amount  
10 ranging from 95 to 60 parts by weight.
2. A thermoplastic resin composition as claimed in Claim 1, wherein  
the crosslink and the active end group are formed by irradiating an  
ionizing radiation in a dosage ranging from 1 kGy to 10 MGy onto the  
15 fluoro-resin in a condition in which the fluoro-resin is heated at a  
temperature of not lower than a melting point of the fluoro-resin in an  
inert gas atmosphere having an oxygen concentration of not higher than  
1.33 kPa.
- 20 3. A thermoplastic resin composition as claimed in Claim 1, wherein  
the fluoro-resin has an average diameter ranging from 5 to 30  $\mu\text{m}$ .
4. A thermoplastic resin composition as claimed in Claim 1, wherein  
the thermoplastic resin is polyamide resin, and the fluoro-resin is  
25 tetrafluoroethylene.
5. A combination of thermoplastic resin composition with a  
lubricating oil, the thermoplastic resin composition being used in  
presence of the lubricating oil, thermoplastic resin composition  
30 comprising:  
a fluoro-resin in an amount ranging from 5 to 40 parts by weight,

the fluoro-resin including crosslink formed between at least a part of carbon atoms forming part of a molecule chain of the fluoro-resin and at least a part of carbon atoms forming part another molecular chain of the fluoro-resin, and active end group formed at least a part of the molecule chain of the fluoro-resin; and

a thermoplastic resin other than the fluoro-resin, in an amount ranging from 95 to 60 parts by weight,

wherein the thermoplastic resin has a surface energy ranging from a first value of [a surface energy of the lubricating oil + 0] N/cm to a second value of [the surface energy of the lubricating oil +  $20 \times 10^5$ ] N/cm.

6. A resinous material comprising:

a thermoplastic resin composition including

a fluoro-resin in an amount ranging from 5 to 40 parts by weight, the fluoro-resin including crosslink formed between at least a part of carbon atoms forming part of a molecule chain of the fluoro-resin and at least a part of carbon atoms forming part another molecular chain of the fluoro-resin, and active end groups formed at least a part of the molecule chain of the fluoro-resin, and

a thermoplastic resin other than the fluoro-resin, in an amount ranging from 95 to 60 parts by weight;

wherein at least a part of the active end groups of the fluoro-resin is chemically bonded with atom forming part of the thermoplastic resin by kneading both the thermoplastic resin and fluoro-resin upon heating both the thermoplastic resin and the fluoro-resin to a temperature close to melting points of the thermoplastic resin and the fluoro-resin and upon applying a vacuum-suction to both the thermoplastic resin and the fluoro-resin.

7. A sliding member comprising:

a thermoplastic resin composition including

a fluoro-resin in an amount ranging from 5 to 40 parts by weight, the fluoro-resin including crosslink formed between at least a part of carbon atoms forming part of a molecule chain of the fluoro-resin and at least a part of carbon atoms forming part another molecular chain of the fluoro-resin, and active end group formed at least a part of the molecule chain of the fluoro-resin, and

a thermoplastic resin other than the fluoro-resin, in an amount ranging from 95 to 60 parts by weight.

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8. A sliding member formed of a resinous material, the resinous material comprising:

a thermoplastic resin composition including

a fluoro-resin in an amount ranging from 5 to 40 parts by weight, the fluoro-resin including crosslink formed between at least a part of carbon atoms forming part of a molecule chain of the fluoro-resin and at least a part of carbon atoms forming part another molecular chain of the fluoro-resin, and active end groups formed at least a part of the molecule chain of the fluoro-resin, and

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a thermoplastic resin other than the fluoro-resin, in an amount ranging from 95 to 60 parts by weight,

wherein at least a part of the active end groups of the fluoro-resin is chemically bonded with atom forming part of the thermoplastic resin by kneading both the thermoplastic resin and fluoro-resin upon heating both the thermoplastic resin and the fluoro-resin to a temperature close to melting points of the thermoplastic resin and the fluoro-resin and upon applying a vacuum-suction to both the thermoplastic resin and the fluoro-resin.

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9. A chain system for an internal combustion engine, comprising a shoe of one of at least one of a chain guide and a chain tensioner,

the shoe being formed of a resinous material, the resinous material including a fluororesin in an amount ranging from 5 to 40 parts by weight, the fluororesin including crosslink formed between at least a part of carbon atoms forming part of a molecule chain of the fluororesin and at least a part of carbon atoms forming part another molecular chain of the fluororesin, and active end group formed at least a part of the molecule chain of the fluororesin, and a thermoplastic resin other than the fluororesin, in an amount ranging from 95 to 60 parts by weight, a metal chain in sliding contact with the shoe, the metal chain having a surface roughness (Rz) of not larger than 5  $\mu\text{m}$ .

10. A seal ring used in a motor vehicle, formed of a resinous material, the resinous material comprising a thermoplastic resin composition, the thermoplastic resin composition including:

15 a fluororesin in an amount ranging from 5 to 40 parts by weight, the fluororesin including crosslink formed between at least a part of carbon atoms forming part of a molecule chain of the fluororesin and at least a part of carbon atoms forming part another molecular chain of the fluororesin, and active end group formed at least a part of the molecule chain of the fluororesin; and

20 a thermoplastic resin other than the fluororesin, in an amount ranging from 95 to 60 parts by weight, the thermoplastic resin being at least one selected from the group consisting of polyamideimide resin, polyetherimide resin, and polyetherether ketone resin.

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11. A method of producing a resinous material containing a fluororesin and a thermoplastic resin other than the fluororesin, comprising:

30 irradiating an ionizing radiation in a dosage ranging from 1 kGy to 10 MGy onto the fluororesin in a condition in which the fluororesin is heated at a temperature of not lower than a melting point of the

fluororesin an inert gas atmosphere having an oxygen concentration of not higher than 1.33 kPa; and

- introducing the fluororesin irradiated with the ionizing radiation into an extruder to knead both the thermoplastic resin and the
- 5 fluororesin upon heating both the thermoplastic resin and the fluororesin to a temperature close to melting points of the thermoplastic resin and the fluororesin and upon applying a vacuum suction to both the thermoplastic resin and the fluororesin.